

# Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



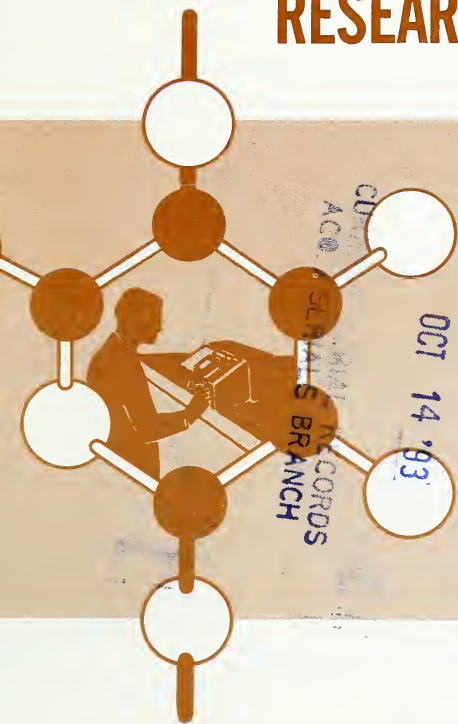
AG84m

mp-851  
851

# FILE COPY

SCIENTIFIC  
CAREERS  
IN

## AGRICULTURAL ENGINEERING RESEARCH



COMM. ACQ. RECORDS  
ANIMALS BRANCH

OCT 14 '93

USDA  
NAT'L AGRIC. LIBRARY  
RECEIVED

Miscellaneous Publication No. 851  
Agricultural Research Service  
U.S. Department of Agriculture

# SCIENTIFIC CAREERS in Agricultural Engineering Research

Are you qualified to perform research that would improve efficiency in the engineering phases of agricultural production? Have you taken college courses that will qualify you?

If so, you may be interested in employment in the Agricultural Research Service (ARS) of the U.S. Department of Agriculture. In

ARS, the Agricultural Engineering Research Division uses agricultural engineers.

This leaflet names the fields of research in which the Agricultural Engineering Research Division is active. It also lists salaries and job benefits, summarizes qualification requirements and tells how to get additional information.



BN-10403X

Agricultural engineers test load capacity of experimental roof.



N-1652X

Agricultural engineers collecting solar energy.

## Research is conducted in these fields:

### ● CROP PRODUCTION ENGINEERING.

Development of farm machines for tillage, planting, fertilizing, and pest control, including studies of forces involved in machine operation; engineering phases of plant environment control under artificial conditions.

### ● HARVESTING AND FARM PROCESSING OF CROPS.

Development of methods and equipment for harvesting, conditioning, and processing all farm crops, including field, forage, fruit, and vegetable crops.

### ● FARM STRUCTURES AND LIVESTOCK ENGINEERING.

Development of fundamental data relating to design, construction, and use of farm buildings; planning of farmstead layout; efficient use of existing and new materials for construction; influence of environment on health and production of farm animals; work simplification and materials handling; and improvement of farmstead water supply and waste disposal systems.

● **ELECTRIFICATION.** Uses of electricity on the farm for power and light; electromagnetic radiation and its effect on growth and production responses of plants, animals, and insects, and useful applications of solar energy radiation; automation of agricultural operations.

## Nature of the work

Agricultural engineers perform basic and applied research in the engineering aspects of the following:

Development of equipment and techniques for more efficient crop production, harvesting, and farm processing.

Design and construction of more efficient service buildings for farmsteads.

Design of most efficient farmstead layouts for economical operation and production.

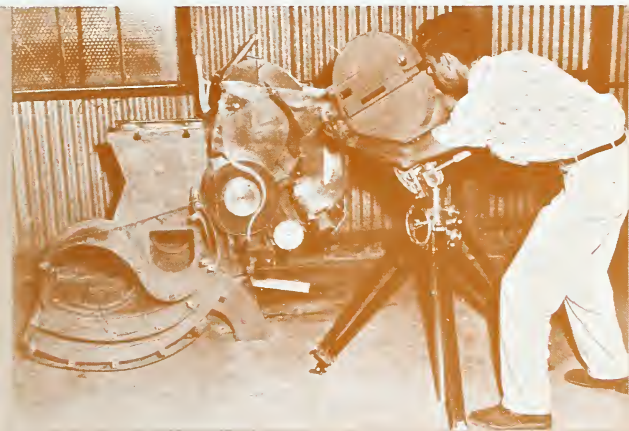
Development of information relative to the influence of environment on health and production of farm animals.

Development of uses of electric energy for labor saving in farm operations; utilization and development of equipment and techniques for irradiating plant and animal materials.

## EMPLOYMENT INFORMATION

These jobs are in the Federal civil service and are filled through competitive examinations. In examinations for most positions, applicants are rated on the basis of an evaluation of their education and experience. All qualified applicants are considered without regard to race, creed, color, sex, or national origin.

You may obtain announcements of examinations for engineers, and application forms, from your college placement officer or from the Personnel Division, Agricultural Research Service, U.S. Department of Agriculture, Washington, D.C., 20250. The announcements will give detailed information about employment requirements.



BN-11372X

Agricultural engineer uses high-speed photography to study farm machinery.



## Qualifications and salaries

The following summary applies to requirements for filling most of the professional research Engineering positions.

Grades	Salaries	Requirements
GS-5	<del>\$6,207</del> \$6,387	Bachelor's degree in Agricultural Engineering as described in the examination announcement.
GS-7	<del>\$7,304</del> \$7,729	Bachelor's degree plus 1 year of appropriate graduate work (30 semester hours), or  Bachelor's degree plus 1 year of progressive research experience, or  Bachelor's degree with college average of "B" or better, standing in upper 25 percent of class, or other specified scholastic achievement.
GS-9	<del>\$7,987</del> \$7,501	Bachelor's degree plus (a) 2 years of appropriate graduate work (60 semester hours), or (b) 2 years of progressively responsible research experience, or  Completion of all requirements for the master's degree in an appropriate field within the last 2 years, and demonstrated superior ability in graduate studies.
GS-11	<del>\$9,267</del> \$10,451	Completion of all requirements for the Ph. D. degree; or 3 years of progressively responsible research

experience (or appropriate combination of experience and education) beyond the bachelor's degree level.

GS-12 ~~\$10,619~~  
\$11,306

Completion of all requirements for the Ph. D. degree in an appropriate field within the last 2 years, and demonstrated superior ability in graduate studies; or 3 years of progressively responsible, highly specialized research experience (or appropriate combination of experience and education) beyond the bachelor's degree level.

Some undergraduates are employed by ARS as student assistants for full-time summer work and for part-time work during the school year. High school graduates who have been accepted by or enrolled in an accredited college or university in an appropriate curriculum may be eligible for appointment at the rate of ~~\$3,814~~  
\$3,725

## AGRICULTURAL ENGINEERING RESEARCH DIVISION



*\$4,149*  
a year; students with 1 full academic year of college, at ~~\$4,149~~ a year; students with 2½ full academic years of college, at ~~\$4,641~~ a year.

*\$4,700*  
**Work locations:** The Agricultural Engineering Research Division has its headquarters at Beltsville, Md. It employs engineers in approximately 50 field locations in the United States.

## Professional Growth and Recognition

- Creative research environment.
- Modern research facilities.
- Association with outstanding engineers.
- Interdisciplinary associations.
- Individual professional recognition.
- Authorship of research reports.
- Advanced training encouraged.

## Job Benefits

- Promotion based on achievement.
- Regular salary increases.
- 5-day, 40-hour workweek.
- Liberal vacation and sick leave with pay.
- Excellent retirement system.
- Low-cost life and health insurance.

## AGRICULTURAL ENGINEERS UTILIZED are those specializing in:

- Farm structures and farmstead engineering*
- Farm electrification*
- Farm materials handling*
- Farm production and farm processing*

Revised December 1965

